

Simple Overlay Plot

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Goal: Guide you through creating simple overlay plots.

Before running the tutorial below, type "*python*" or "*cdat*" at the command line.Â You will see the python prompt appear (i.e., ">>>"). You can now enter the command lines below.

You can [view](#) or [download](#) the full source code. To run the source code at the command line, type: "*python overlay_file.py*".

```
# Import the modules needed for the tutorial
# cdms - Climate Data Management system accesses gridded data.
# vcs - Visualization and control System 1D and 2D plotting routines.
# cdutil - Climate utilitizes that contains miscellaneous routines for
#           manipulating variables.
# time - This module provides various functions to manipulate time values.
# os - Operation System routines for Mac, DOS, NT, or Posix depending on
#       the system you're on.
# sys - This module provides access to some objects used or maintained by
#       the interpreter and to functions that interact strongly with the interpreter.
import vcs, cdms, cdutil, time, os, sys

# Open data file:
filepath = os.path.join(sys.prefix, 'sample_data/clt.nc')
cdmsfile = cdms.open( filepath )

# Extract 3 dimensional data sets and get a subset of the time dimension
data = cdmsfile( 'clt' )
data1 = cdmsfile('u', longitude=(-180, -50), latitude = (10., 72))
data2 = cdmsfile('v', longitude=(-180, -50), latitude = (10., 72))
data3 = cdmsfile('clt',
                  longitude=(-180, -50), latitude = (10., 70))

# Set the longitude and latitude axes of the "v" variable
# to that of the "u" variable.
data2.setAxis(2, data1.getAxis(2))
data2.setAxis(3, data1.getAxis(3))

# Initial VCS:
v = vcs.init()
```

Overlay the same data using the isofill and isoline graphics methods:

```
# 1st plot the data with the isofill graphics method.
v.isofill( data )

# 2nd overlay the data with the isoline graphics method.
v.isoline( data )
```

Overlay boxfill data with vector data.

```
# Clear the VCS Canvas
v.clear( )
```

```
# Plot the variable clt with the boxfill graphics method,  
# then the u and v vector as an overlay. Because it  
# is an overlay we do not want to plot any text or  
# continents. To only plot data, use the "default_dud"  
# template.  
v.boxfill( data3 )  
v.vector( data1, data2, 'default_dud', continents=0 )
```

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